

Use of Complete Decongestive Therapy and a Task-oriented Approach in Treating Secondary Lymphedema and Improving Ambulation in a Patient Following a Stroke: A Case Report

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Background and Purpose

- Every year, approximately 795,000 people in the United States experience a new or recurrent stroke.
- More than 30% of the survivors cannot walk independently six months following a stroke
- Of those who are able to walk independently, only a small proportion can walk with sufficient speed and endurance to be able to function within the community.
- Paralysis of the extremities leads to a decreased and ineffective muscle pumping action, resulting in lymph stasis.
- Lymphedema is the tissue fluid accumulation that arises due to impaired lymphatic drainage
- Fluid accumulation further increases difficulty with ambulation post stroke

Purpose

The purpose of this case is to report the use of complete decongestive therapy for the treatment of lymphedema as part of a comprehensive treatment program consisting of a task-oriented approach to improve walking ability in a stroke survivor.

Case Description

- 53 year old female developed lower extremity lymphedema following a CVA
- Right sided hemiparesis, decreased range of motion and decreased strength in the right lower extremity, and increased tone and spasticity throughout the right upper and lower extremity
- Decreased strength, impaired balance (Tinetti), and increased limb heaviness affected her ambulation and ADL's

Interventions

Complete Decongestive Therapy (CDT):

- 1.Skin Care:** Keeping the edematous limb clean, dry, and moisturized with a lotion of a neutral pH.
- 2.Compression:** Application of compression bandages below the knee on the right consisting of tricofix, foam wrapping, and short stretch bandages (6,8,and 10 cm wide).



<https://ahc.aurorahealthcare.org/lywb/baycare/x21086bc.pdf>

- 3.Manual Lymphatic Drainage:** Deep cervical lymph nodes, axillary lymph nodes on the right, IA anastomosis, deep abdominal techniques, inguinal lymph node on the right, and pathways throughout the right LE.



<http://www.lymphedemablog.com/2013/01/22/self-manual-lymph-drainage-for-lymphedema-affecting-the-leg/>

4.Lymphedema Remedial Exercises

Task Oriented-Approach:

- Strength training and intensive mobility training
- Intensive mobility training
 - 1) Graded strengthening
 - 2) Aerobic component
 - 3) Challenging walking activities with postural control demands

Outcomes

Circumference Measurements of the Right Lower Extremity

	Initial Evaluation	10 th visit	20 th visit
All measured in cm			
Metatarsals	24.0	23.0	23.0
Figure 8	61.0	55.0	58.3
Malleoli	31.0	28.0	29.0
20 cm up from the ankle	39.5	32.6	34.1
30 cm up from the ankle	46.5	43.2	41.7
Popliteal Fossa	46.5	44.6	42.5

Tinetti Balance Assessment

	Initial Evaluation	10 th visit	20 th visit
Balance Score	7	11	13
Gait Score	3	5	8
Total	10	16	21
% Disability	64%	43%	25%
Fall Risk	High	High	Moderate

Discussion

- Despite her chronicity post-stroke, the patient made improvements in balance, gait speed, and gait mechanics
- CDT helped the patient experience a decrease in circumference measurements on the right
- Decreased fall risk and decreased % disability per the Tinetti Balance Assessment
- Further research is needed to explore the impact of lymphedema in patients following a stroke

Acknowledgments

The patient signed an informed consent allowing the use of medical information for this report and received information on the institution's policies regarding the Health Insurance Portability and Accountability Act.

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